PORSCHE 914 ENGINE MODIFICATION

Porsche 914 1.7 & 2.0 (1970-73)

NOTE – 1970-71 models use Bosch Electronic Fuel Injection only for emission control. For additional information, see Bosch Electronic Fuel Injection in CARBURETION Section.

DESCRIPTION

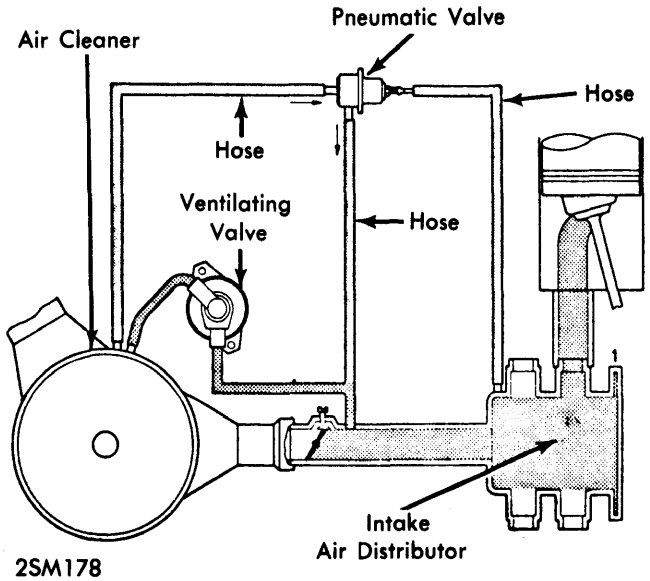
In addition to changes to the electronic fuel injection, the Porsche 914 incorporates a device to supply additional air for combustion on engine overrun (deceleration) at high engine speed, and a temperature and load dependent air intake pre-heating system.

Engine Overrun – During deceleration, the mixture becomes too rich for proper combustion. To keep the CO content low during this condition, additional air is conveyed to the air intake distributor.

Air Intake Pre-Heating – A vacuum box is incorporated in the air intake scoop with a diaphragm and lever operating the regulating flap. Vacuum box is connected by hoses to the intake manifold by a ventilating valve which is regulated thermostatically.

OPERATION

Engine Overrun – At high engine speeds and with the throttle closed (deceleration), vacuum is present in the intake air distributor. In this condition, the pneumatic valve will open so that air can pass through the hose from the air cleaner to the intake air distributor. The air/fuel mixture is thus leaned out with this additional air to provide a more complete combustion during engine overrun (deceleration) conditions.



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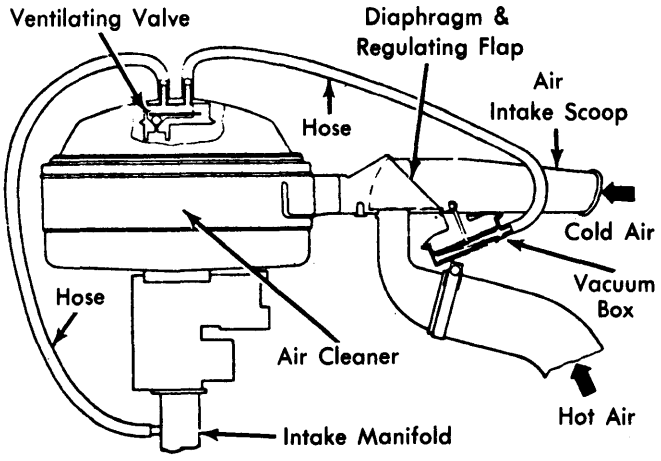
ENGINE OVERRUN AIR SUPPLY SYSTEM

Air Intake Pre-Heating – There are two basic functions which this system controls; load dependent function, and temperature control function. They operate as follows:



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AIR INTAKE PRE-HEATING SYSTEM

1) During load dependent control function, if the throttle flap is closed or only slightly open, with engine running, the high vacuum moves the diaphragm and releases the hot air supply by means of the regulating flap. If the vacuum drops when accelerating, the diaphragm adjusts the regulating flap so that the hot air of the intake air decreases until the engine finally receives cold air only.

2) During temperature control function, the bi-metal valve remains closed as long as the intake air has a temperature of less than about 132°F. At this time, unrestricted vacuum is applied in the diaphragm box. Hot air is fed to air intake by diaphragm and hot air regulating flap. If temperature reaches 132°F, valve opens and outside air flowing in reduces the vacuum. The regulating flap in air intake manifold then shuts off the hot air supply independent of the throttle valve setting. This provides temperature regulation of the intake air during all operating conditions.

MAINTENANCE

Checking Engine Overrun System – Pull off hose between valve and air cleaner at the air cleaner. Start engine and increase speed to 3000 RPM, quickly close throttle. Air should be drawn into the hose at suction end. If no suction effect is detected, replace valve.

System Inspection – A complete maintenance and inspection should be carried out at least once a year, inspect all components for proper operation and check all hoses for deterioration.

Ignition Timing – With engine at normal operating temperature, vacuum hoses disconnected, timing light and tachometer connected, set engine speed to 3500 RPM. Adjust distributor to achieve timing of 27°BTDC. Timing mark is on impeller of cooling blower and is to be indexed with mark on blower housing.

Idle Adjustment – With air filter removed, engine at normal operating temperature and tachometer connected, set engine speed to 900±50 RPM by turning idle adjustment screw.